0008E0 "4206250

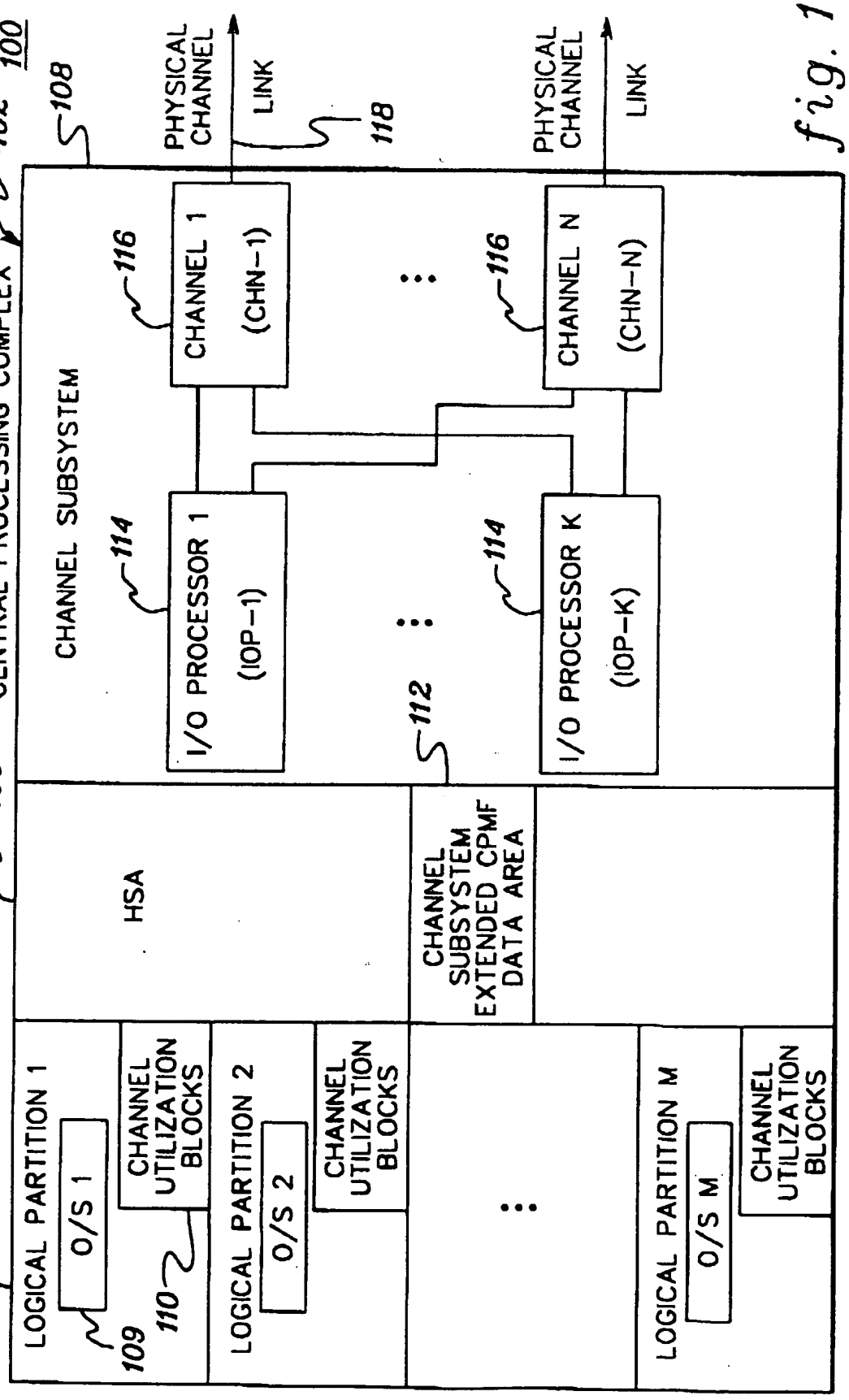

fig. 1

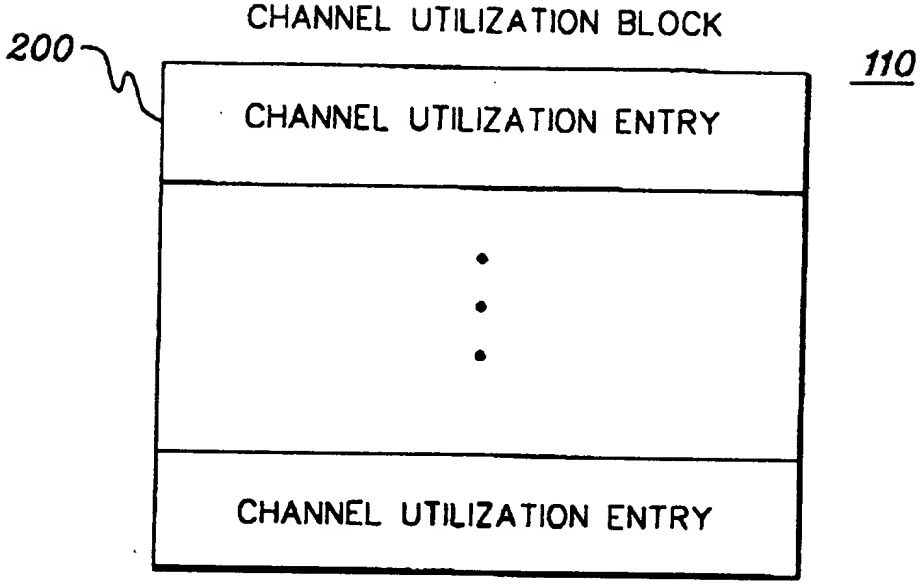

fig. 2A

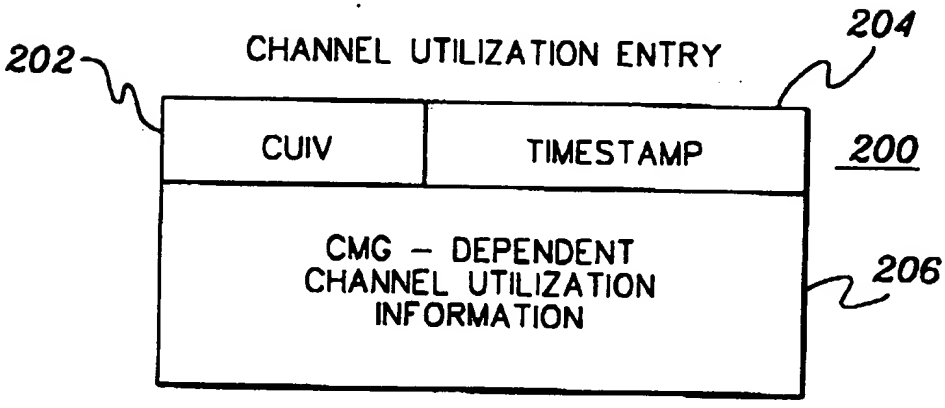

fig. 2B

Docket: POU9-1999-0176-US1

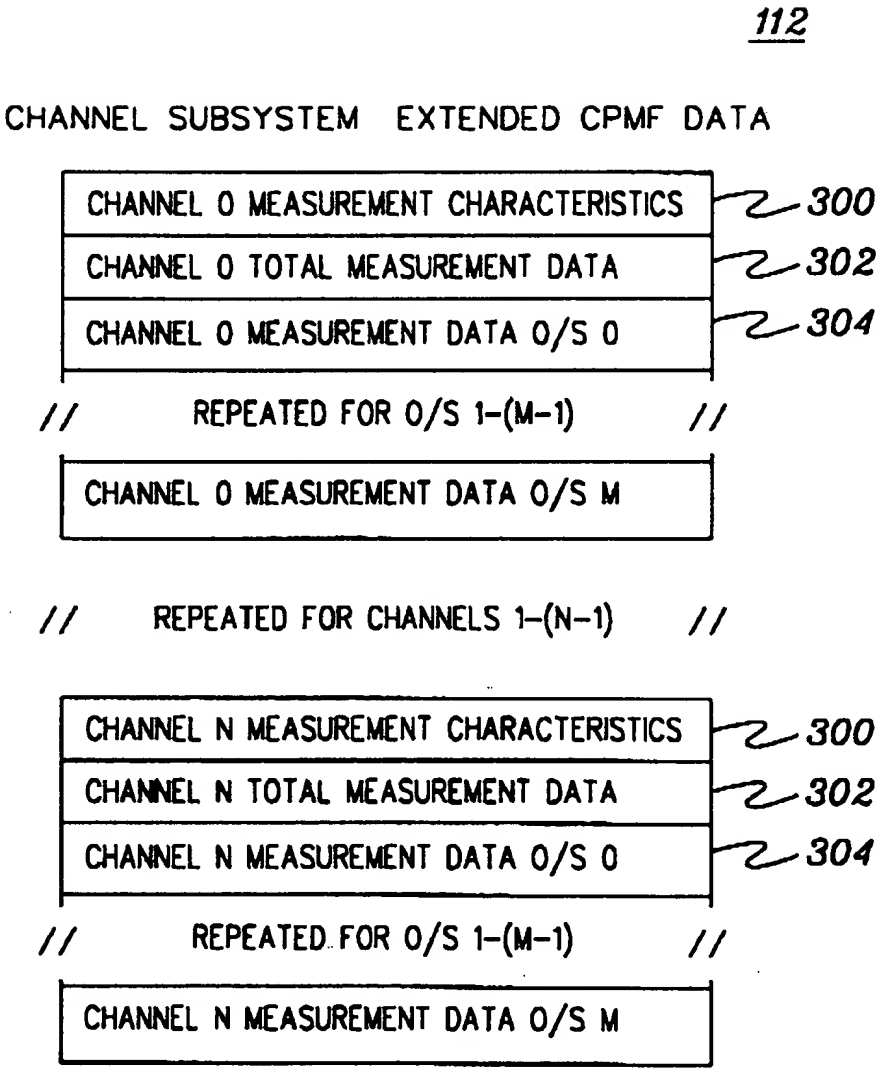
112
CHANNEL SUBSYSTEM EXTENDED CPMF DATA
CHANNEL 0 MEASUREMENT CHARACTERISTICS
300
CHANNEL 0 TOTAL MEASUREMENT DATA
302
CHANNEL 0 MEASUREMENT DATA 0/S 0
304
// REPEATED FOR 0/S 1-(M-1) //
CHANNEL 0 MEASUREMENT DATA 0/S M
// REPEATED FOR CHANNELS 1-(N-1) //
CHANNEL N MEASUREMENT CHARACTERISTICS
300
CHANNEL N TOTAL MEASUREMENT DATA
302
CHANNEL N MEASUREMENT DATA 0/S 0
304
// REPEATED FOR 0/S 1-(M-1) //
CHANNEL N MEASUREMENT DATA 0/S M

fig. 3

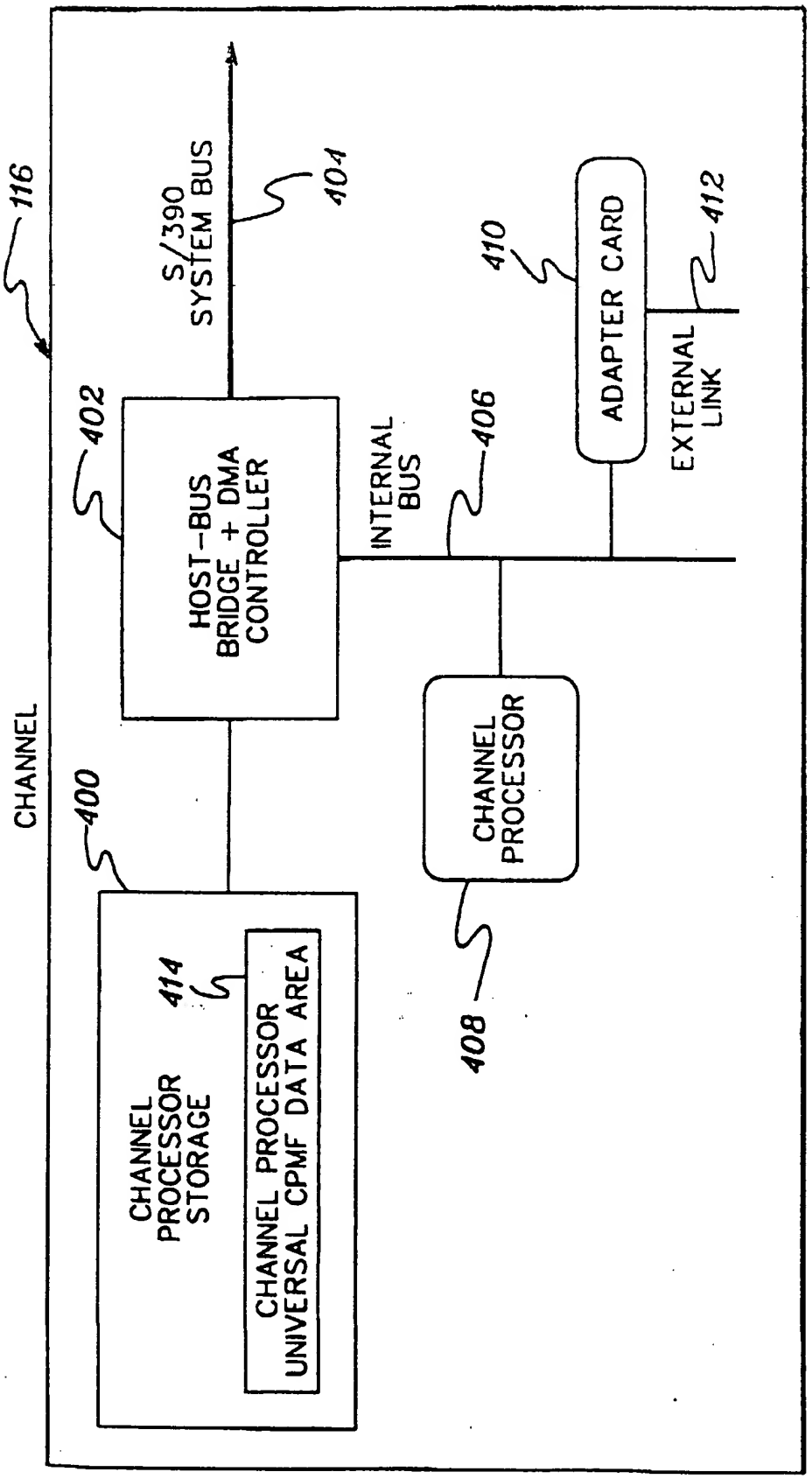
116
CHANNEL
400
CHANNEL PROCESSOR STORAGE
414
CHANNEL PROCESSOR UNIVERSAL CPMF DATA AREA
402
HOST-BUS BRIDGE + DMA CONTROLLER
S/390 SYSTEM BUS
404
INTERNAL BUS
406
CHANNEL PROCESSOR
408
410
ADAPTER CARD
412
EXTERNAL LINK

fig. 4

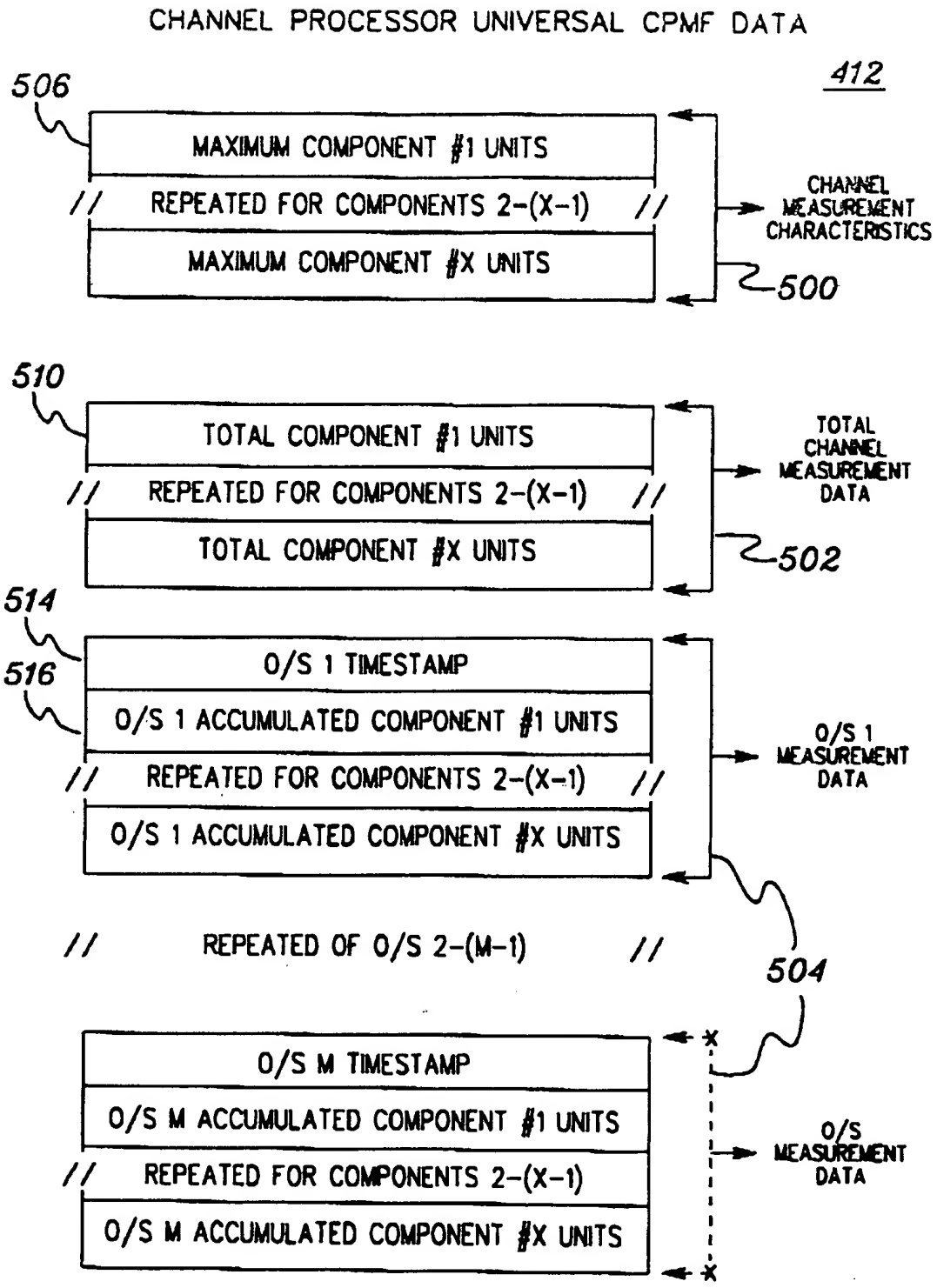
CHANNEL PROCESSOR UNIVERSAL CPMF DATA
412
506
MAXIMUM COMPONENT #1 UNITS
REPEATED FOR COMPONENTS 2-(X-1)
MAXIMUM COMPONENT #X UNITS
CHANNEL MEASUREMENT CHARACTERISTICS
500
510
TOTAL COMPONENT #1 UNITS
REPEATED FOR COMPONENTS 2-(X-1)
TOTAL COMPONENT #X UNITS
TOTAL CHANNEL MEASUREMENT DATA
502
514
516
O/S 1 TIMESTAMP
O/S 1 ACCUMULATED COMPONENT #1 UNITS
REPEATED FOR COMPONENTS 2-(X-1)
O/S 1 ACCUMULATED COMPONENT #X UNITS
O/S 1 MEASUREMENT DATA
REPEATED OF O/S 2-(M-1)
504
O/S M TIMESTAMP
O/S M ACCUMULATED COMPONENT #1 UNITS
REPEATED FOR COMPONENTS 2-(X-1)
O/S M ACCUMULATED COMPONENT #X UNITS
O/S MEASUREMENT DATA

fig. 5

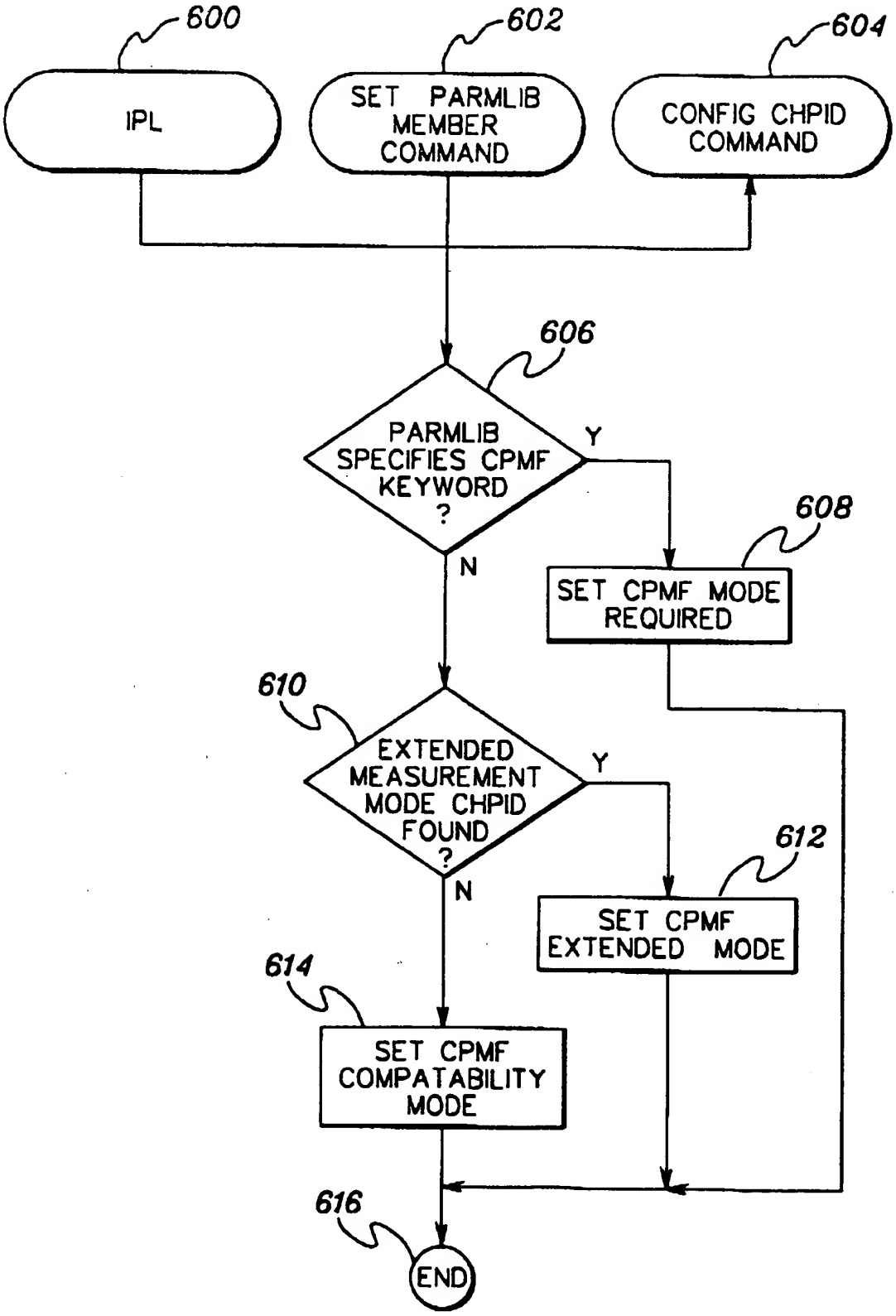

fig. 6

09509004.050800

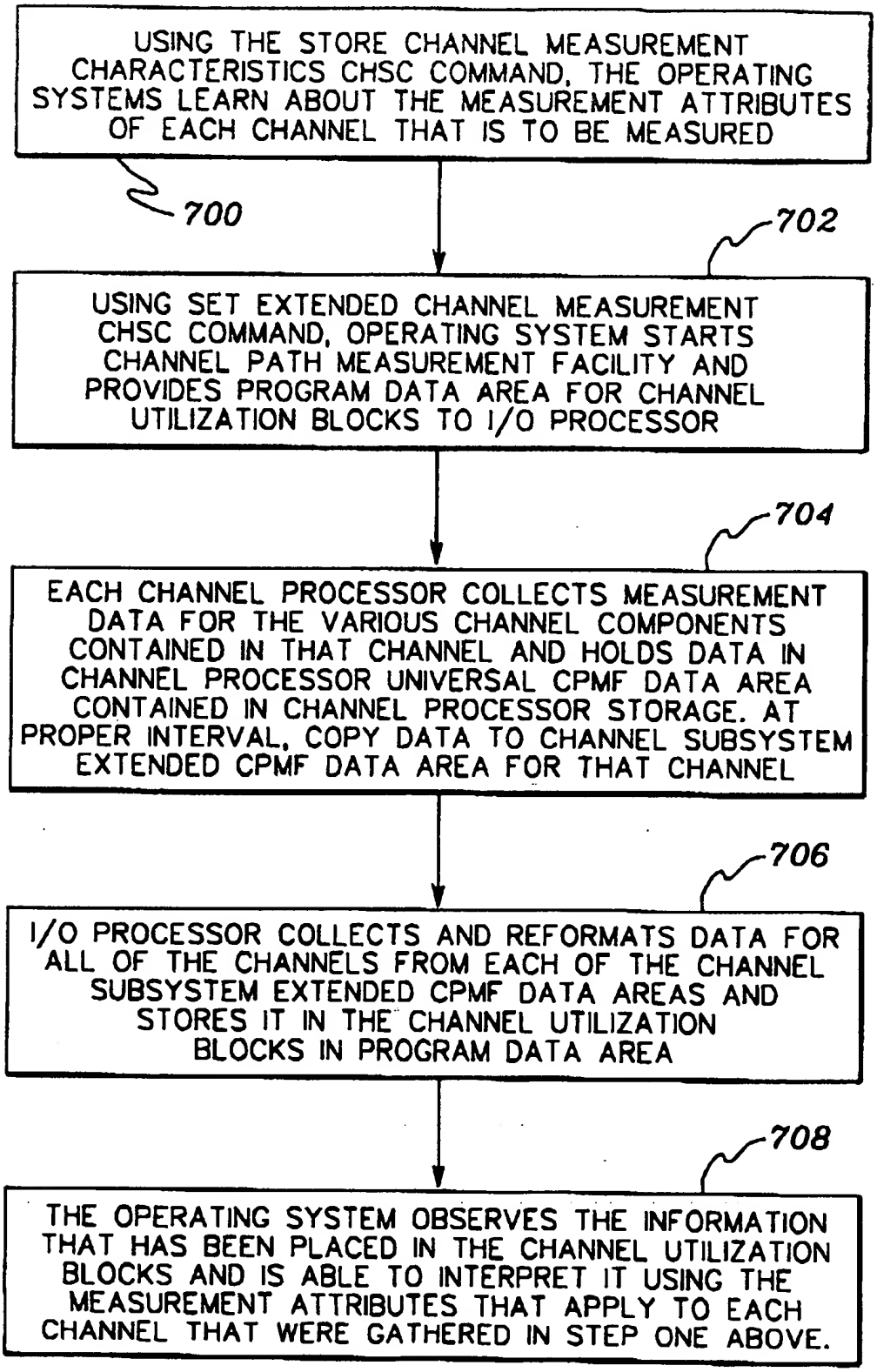
USING THE STORE CHANNEL MEASUREMENT CHARACTERISTICS CHSC COMMAND, THE OPERATING SYSTEMS LEARN ABOUT THE MEASUREMENT ATTRIBUTES OF EACH CHANNEL THAT IS TO BE MEASURED
700
702
USING SET EXTENDED CHANNEL MEASUREMENT CHSC COMMAND, OPERATING SYSTEM STARTS CHANNEL PATH MEASUREMENT FACILITY AND PROVIDES PROGRAM DATA AREA FOR CHANNEL UTILIZATION BLOCKS TO I/O PROCESSOR
704
EACH CHANNEL PROCESSOR COLLECTS MEASUREMENT DATA FOR THE VARIOUS CHANNEL COMPONENTS CONTAINED IN THAT CHANNEL AND HOLDS DATA IN CHANNEL PROCESSOR UNIVERSAL CPMF DATA AREA CONTAINED IN CHANNEL PROCESSOR STORAGE. AT PROPER INTERVAL, COPY DATA TO CHANNEL SUBSYSTEM EXTENDED CPMF DATA AREA FOR THAT CHANNEL
706
I/O PROCESSOR COLLECTS AND REFORMATS DATA FOR ALL OF THE CHANNELS FROM EACH OF THE CHANNEL SUBSYSTEM EXTENDED CPMF DATA AREAS AND STORES IT IN THE CHANNEL UTILIZATION BLOCKS IN PROGRAM DATA AREA
708
THE OPERATING SYSTEM OBSERVES THE INFORMATION THAT HAS BEEN PLACED IN THE CHANNEL UTILIZATION BLOCKS AND IS ABLE TO INTERPRET IT USING THE MEASUREMENT ATTRIBUTES THAT APPLY TO EACH CHANNEL THAT WERE GATHERED IN STEP ONE ABOVE.

fig. 7

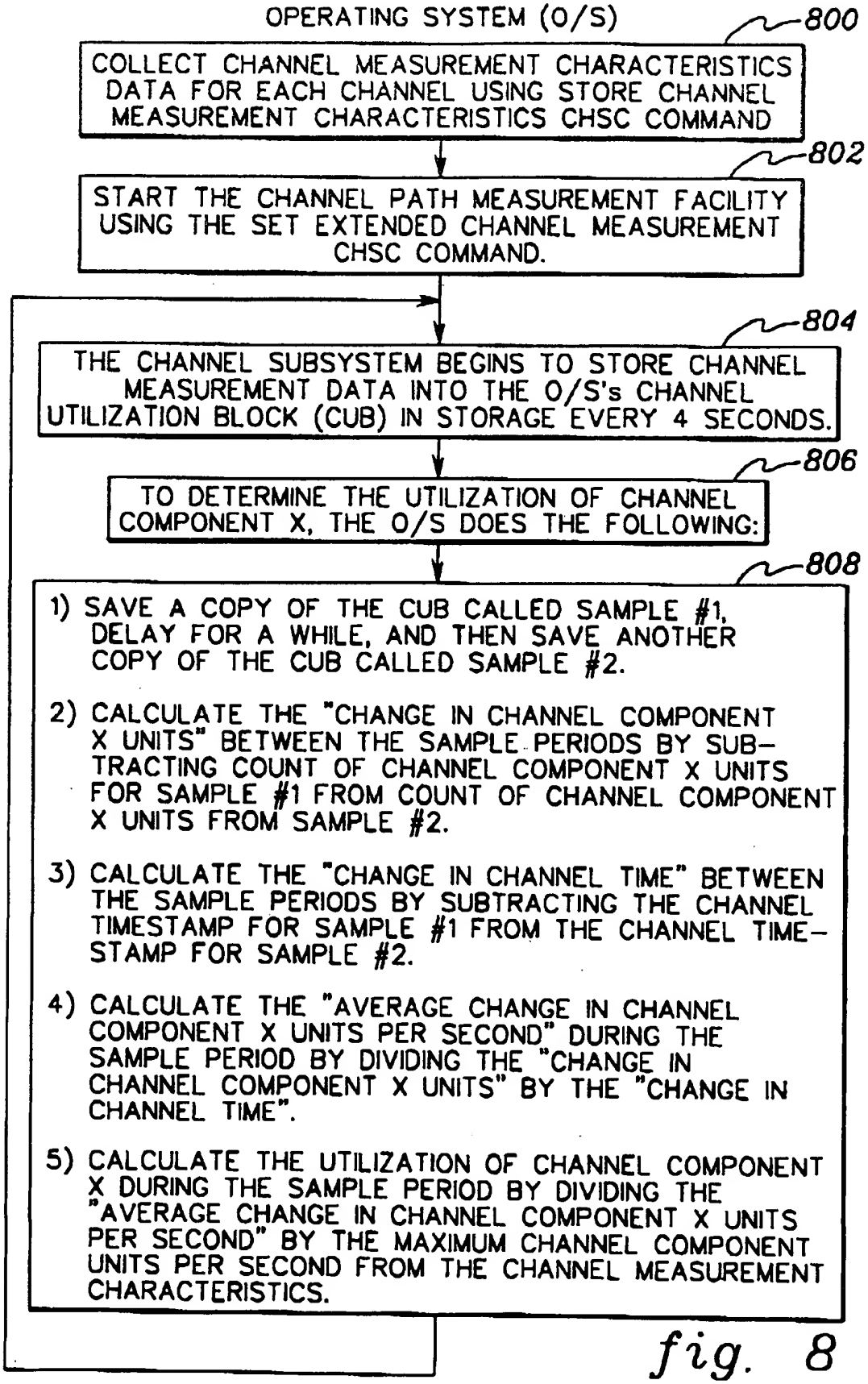

fig. 8

Document 1 of 1

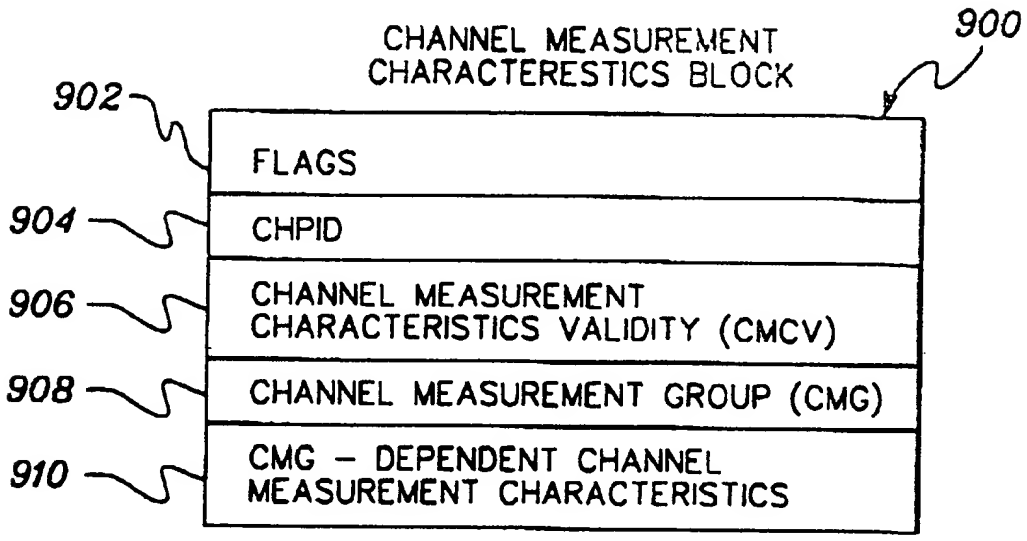

fig. 9A

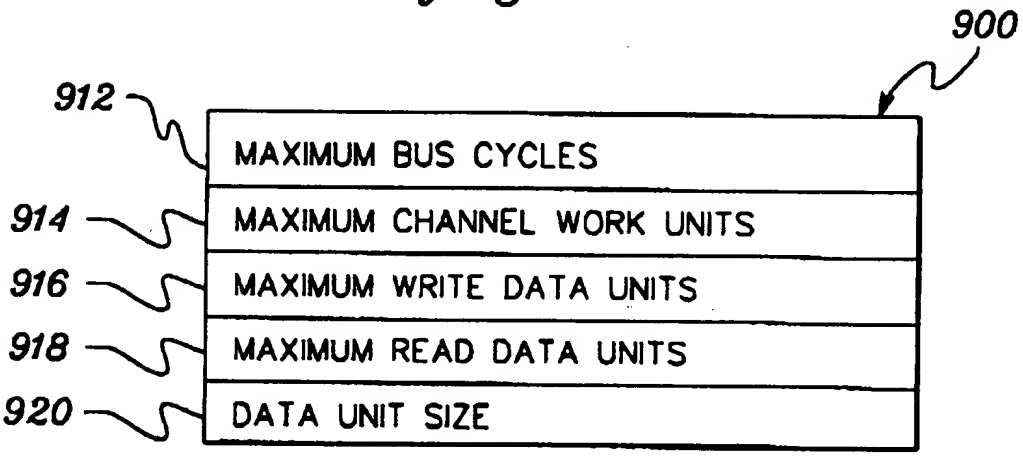

fig. 9B

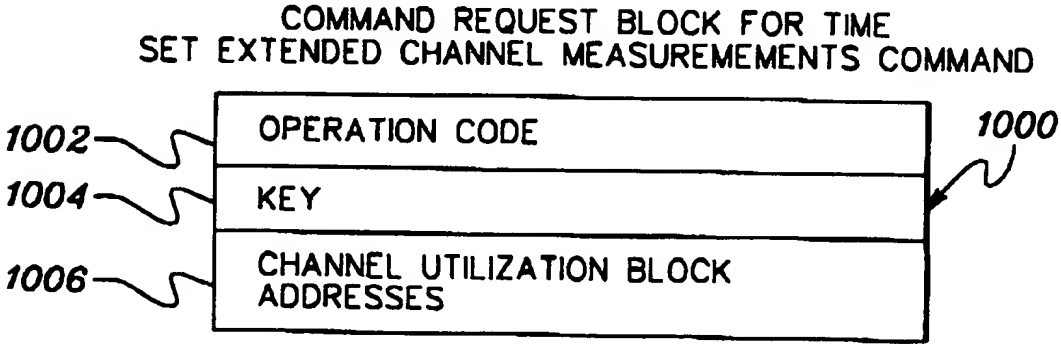

fig. 10

0005360.0005360

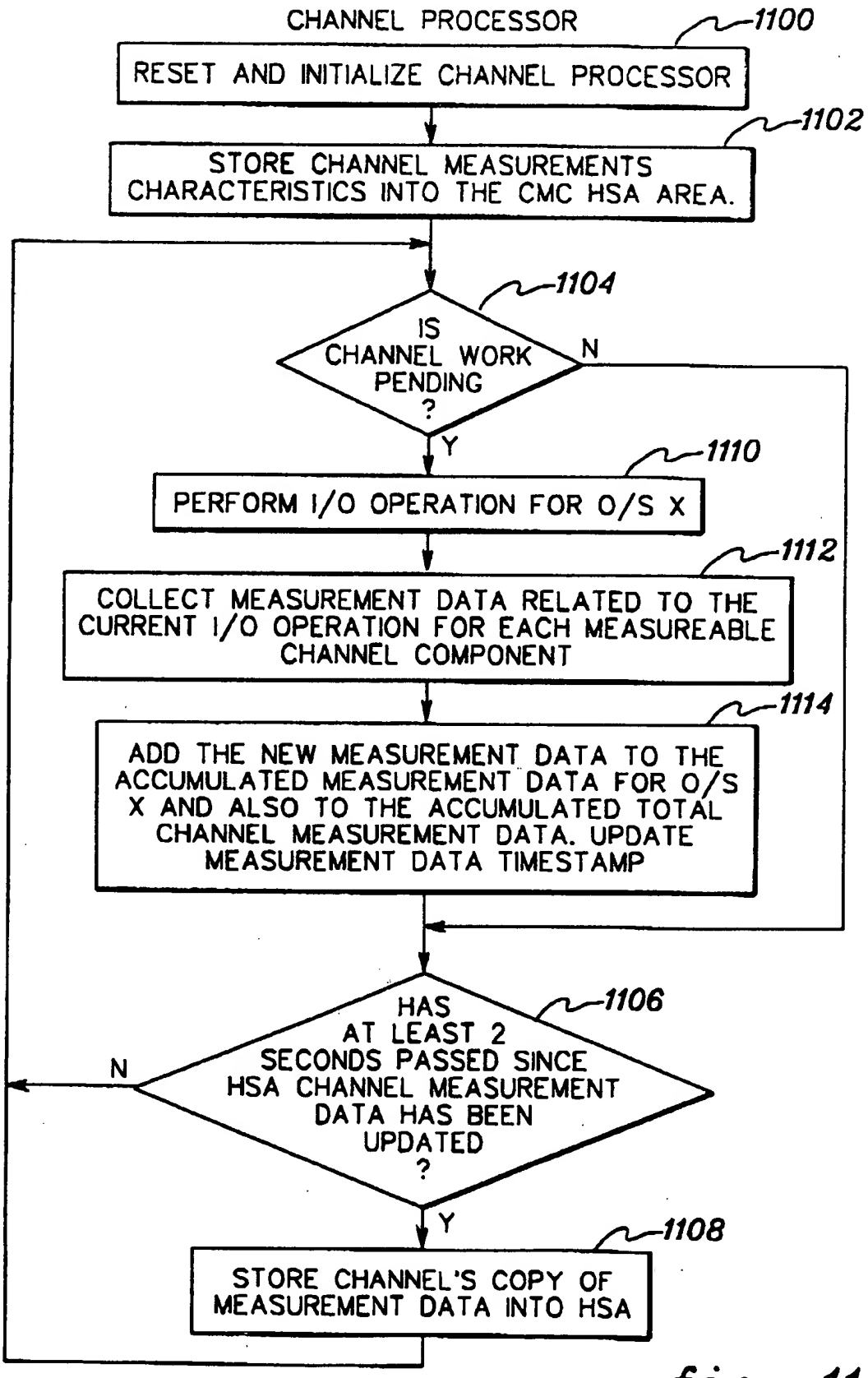
CHANNEL PROCESSOR
1100
RESET AND INITIALIZE CHANNEL PROCESSOR
1102
STORE CHANNEL MEASUREMENTS CHARACTERISTICS INTO THE CMC HSA AREA.
1104
IS CHANNEL WORK PENDING ?
N
Y
1110
PERFORM I/O OPERATION FOR O/S X
1112
COLLECT MEASUREMENT DATA RELATED TO THE CURRENT I/O OPERATION FOR EACH MEASUREABLE CHANNEL COMPONENT
1114
ADD THE NEW MEASUREMENT DATA TO THE ACCUMULATED MEASUREMENT DATA FOR O/S X AND ALSO TO THE ACCUMULATED TOTAL CHANNEL MEASUREMENT DATA. UPDATE MEASUREMENT DATA TIMESTAMP
1106
HAS AT LEAST 2 SECONDS PASSED SINCE HSA CHANNEL MEASUREMENT DATA HAS BEEN UPDATED ?
N
Y
1108
STORE CHANNEL'S COPY OF MEASUREMENT DATA INTO HSA

fig. 11

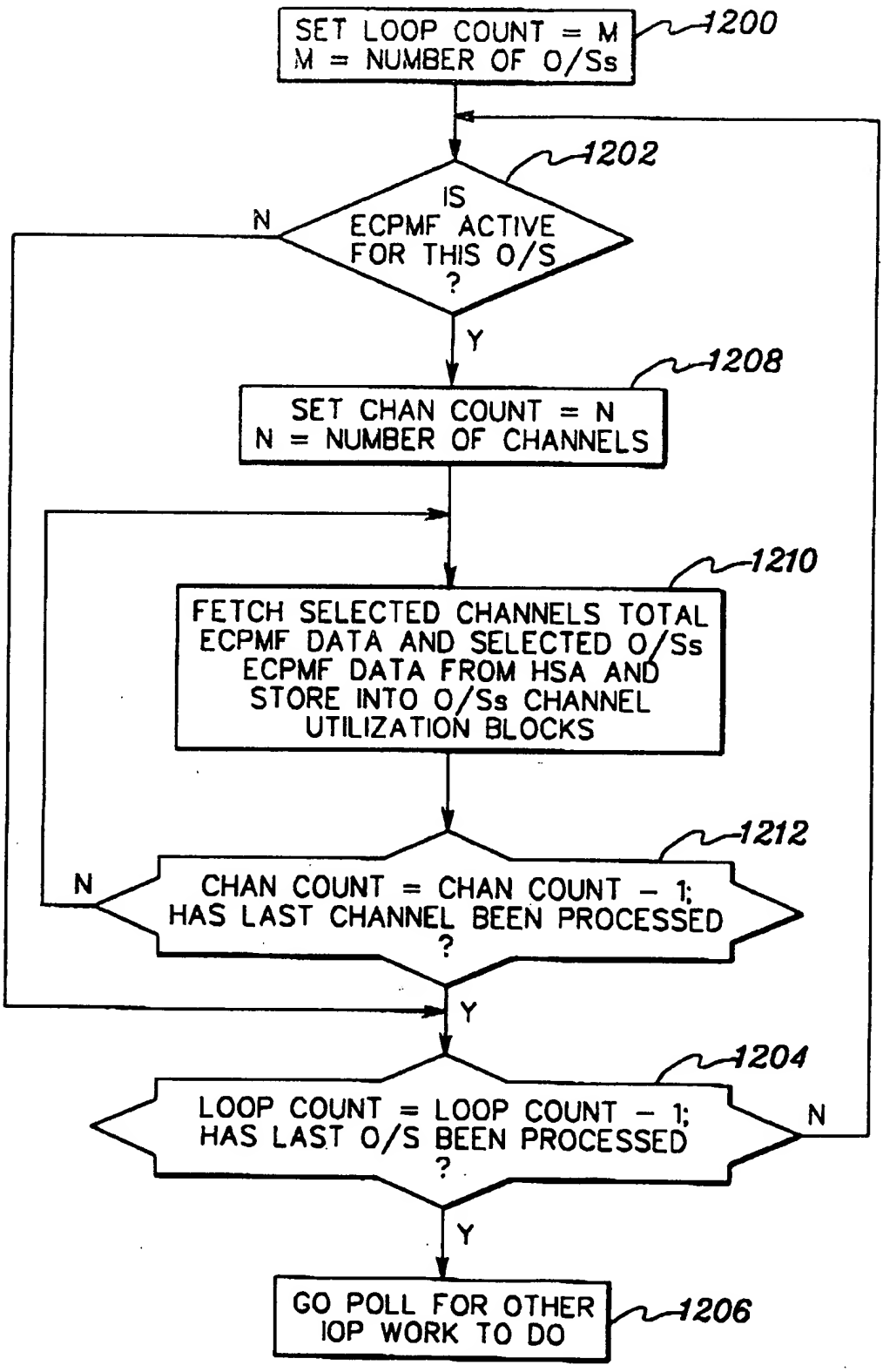
I/O PROCESSOR
SET LOOP COUNT = M
M = NUMBER OF O/Ss
1200
1202
IS
ECPMF ACTIVE
FOR THIS O/S
?
N
Y
1208
SET CHAN COUNT = N
N = NUMBER OF CHANNELS
1210
FETCH SELECTED CHANNELS TOTAL
ECPMF DATA AND SELECTED O/Ss
ECPMF DATA FROM HSA AND
STORE INTO O/Ss CHANNEL
UTILIZATION BLOCKS
1212
CHAN COUNT = CHAN COUNT - 1;
HAS LAST CHANNEL BEEN PROCESSED
?
N
Y
1204
LOOP COUNT = LOOP COUNT - 1;
HAS LAST O/S BEEN PROCESSED
?
N
Y
GO POLL FOR OTHER
IOP WORK TO DO
1206

fig. 12